REMARKS/ARGUMENTS

Claims 1-31 are currently pending. Claims 1, 4, 7, 8, 14, 17, 18, 19, and 21 are currently amended. New Claims 28-31 have been added. No claim has been cancelled.

In the amendments made to Claims 1, 17, and 18, the revisions clarify and indicate that the barium sulfate is in the form of particles comprising barium sulfate wherein barium sulfate at an exterior surface of the particles has been surface treated with the aminosilane. The presence of the barium sulfate in the form of particles is described in the original disclosure, e.g., at page 5, lines 6-8 and in original claim 18. The deposition/addition of the aminosilane upon barium sulfate at the exterior surface of the particles is also disclosed in the original disclosure, e.g., at page 5, lines 9-10 and page 9, lines 22-33. In addition, claims 1 and 18, as amended, indicate the "flowable liquid" form of the coating composition (e.g., page 23, lines 25-26).

Minor editorial changes were made in dependent claims 4, 7 and 8.

In the amendments made to Claims 14 and 21, a definition provided in the original disclosure for "coalescing system" is added, e.g., see page 6, lines 19-26.

New claim 28 is based on the description of the curable resin content levels as described in the original disclosure at page 16, lines 11-14.

New claim 29 is based on a rewriting of original dependent claim 3 in independent form.

New claim 30 is based on the subject matter described, e.g., in original claim 3.

New claim 31 is based on subject matter described at page 24, lines 15-18.

No new matter has been introduced.

In paragraph 1 of the Office Action, Claims 2, 14, 16, and 21 have been rejected under 35 USC §112, second paragraph, for indefiniteness.

As to claim 2, Applicant disagrees that the claim is indefinite because "no uniform standard can be applied to this test [ASTM 714]", as urged in the Office Action. An Applicant is entitled to be his or her own lexicographer. Applicant has provided an explicit definition and description in the application specification for the blistering scale test recited in present claim 2 (see page 32, lines 4-9, 14-20). Possible variant definitions used for a term or test by others are irrelevant to the assessment of whether one of ordinary skill in the art would adequately understand the definition provided by the Applicant at hand. Applicant's definition controls. Thus, Applicant kindly disagrees that U.S. Pat. No. 6,417,292 is germane to how Applicant has chosen to define a blistering scale pursuant to ASTM standard 714.

As to claims 14 and 21, Applicant submits that the claim terminology "coelescing system" of interest has been defined in the corresponding specification (see page 6, lines 19-26). In an effort to advance prosecution, Applicant has inserted the provided definition into the subject claim in lieu of the term itself.

As to claim 16; Applicant submits that "pigment volume concentration (PVC)" and "critical pigment volume concentration (CPVC)" are terms of art having recognized meanings. In this respect, reference is made, for example, to U.S. Pat. No. 4,171,228 (cited in the accompanying Information Disclosure Statement; see, e.g., col. 1, line 68 to col. 2, line 8). Applicant has not interposed a special definition for this terminology in the present application, so the ordinary meanings should apply.

Therefore, it is respectfully submitted that this rejection is not applicable to the claims, or no longer applicable to the current amended claims, and, accordingly, this rejection should be withdrawn.

In paragraph 4 of the Office Action, Claims 1, 4-6, 8, 10, 11, 14, 17, 18, 21 23 and 25-27 have been rejected under 35 USC §102(b)as being anticipated by U.S. Pat. No. 6,101,360 to Hara et al. Applicant respectfully traverses for the following reasons.

Hara et al. is understood to relate to an image forming apparatus and an intermediate transfer belt (abstract). The intermediate transfer belt is described by Hara et al. as being a three-layer comprising a film-like base 6a which is made of plastic material and an electrically-conductive agent (e.g., col. 5, lines 1-5). In Example 3 of Hara et al., which was referenced specifically in the Office Action, barium oxide particles were coated with a tin oxide electrically-conductive layer, and processed with aminopropyl triethoxy silane (col. 14, line 65 et seq.). The resulting metal oxide composite material was added to

a polyimide varnish and cast on a stainless steel sheet and dried. Although not explicitly stated by Hara et al., it is apparent that a discrete plastic (polyimide) sheet was obtained by removal of the dried, cast film from the stainless steel sheet, followed by splicing the ends thereof to form an endless "seamless belt base" upon which an elastic layer 6b and a low surface energy layer 6c are applied to form a three-layered belt structure (col. 15, lines 3-25; col. 10, lines 5-14; FIGS. 1, 4).

By contrast, present claims 1, 17 and 18 are directed to a coating composition or method of its application to a solid substrate surface, and not a plastic sheet or belting manufacture. Although not limited thereto, the coating compositions of the present invention offer an advantage of helping to eliminate needs for metal pigments for corrosion control (page 4, lines 14-17).

Also, as the barium sulfate of Hara et al. is coated with a necessary metal oxide, and then processed with the aminosilane, then the aminosilane and barium sulfate never come in contact with one another.

In contrast to Hara et al., the present amended claims 1, 17 and 18, as amended, further clarify that barium sulfate, at an exterior surface of the particles, has been surface treated with, and thus has been directly contacted at its surface with, an organosilane containing an amino moiety, and not a different material such as tin oxide. That is, Hara et al. contact an intervening tin oxide layer with an aminosilane, not barium sulfate (col. 14, line 67 to col. 15, line 3).

Thus, Applicant kindly disagrees with the implication made in the Office Action that Hara et al. describe surface treating barium sulfate with an aminosilane.

In addition, in the present invention, neither the barium sulfate nor the amino silane treated barium sulfate is electrically conductive, which is a requisite property of Hara et al.'s tin oxide-coated barium oxide particles.

In view of at least the above differences, Applicant respectfully submits that Hara et al. does not anticipate any of the present claims, and, thus, Applicant requests that this rejection be withdrawn.

In paragraph 5 of the Office Action, Claims 7, 15, 20, 22, and 24 have been rejected under 35 USC §103 as being unpatentable over Hara et al. Applicant respectfully traverses for the following reasons.

Applicant submits that claims 7, 15, 20, 22, and 24 distinguish Hara et al. for at least the same reasons as their respective parent claim, for the reasons explained supra. Reference is made thereto. There is no suggestion or guidance found in Hara et al. that might have motivated one of ordinary skill in the art to somehow modify and deviate from the belt structure of Example 3 of Hara et al. in a manner relevant to the coating composition and its method of use as recited in the present claims.

In view of at least the above differences, Applicant respectfully submits that Hara et al. does not render obvious any of the present claims, and, thus, Applicant requests that this rejection be withdrawn.

In paragraph 6 of the Office Action, Claims 1 and 4-7 have been rejected under 35 USC §103 as being unpatentable over U.S. Pat. No. 3,849,187 to Fetscher et al. Applicant respectfully traverses for the following reasons.

Fetscher et al. is directed to encapsulant compositions for semiconductors. The Office Action specifically references column 2, lines 5-30, of Fetscher et al. for describing precoating a filler with an epoxy- or amino-silane, and Example II for a formulation containing barium sulfate filler and an aminosilane. Example I is referenced for describing aminosilane surface treatment of quartz.

As acknowledged in the Office Action, the formulation described in referenced Example II of Fetscher et al. includes fillers, which comprise barium sulfate and a significant amount of other filler types such as hydrated alumina powder, which were not initially surface treated with an aminosilane before admixture with a resin. Rather, the aminosilane is added as a separate component to formulation B in Example II of Fetscher et al.

Also, the added aminosilane in Fetscher et al. gives no performance benefit to the encapsulant by the high temperature test, only apparently by the boiling water test. More importantly, no connection is apparent or obvious from Fetscher et al. between the high and low encapsulant performance in boiling water and the presence or absence of either the barium sulfate or the hydrated alumina powder, only to the presence or absence of the aminosilane. This is particularly striking in light of the high performance of "epoxysilane alone - no filler" of Ex. VIII in Fetscher et al.

Conversely, the selection of barium sulfate is critical to the coatings performance of the present invention versus silica which is a frequent component in Fetscher's examples.

As another difference from the present invention, all of Fetscher et al.'s examples deal with various epoxy resins that, at ambient temperature, are apparently either glassy solids or molasses-type liquids (e.g. Ex I: [1500 cps @ 125 °C], [melting point = 125 °F], [mixing Parts A + B at 100 °C], [casting at 125 °C]), which is unlike the ambient temperature low viscosity liquids that may be used in some embodiments of the present invention (e.g., see claim 31).

Nonetheless, the Office Action is understood to posit that Fetscher et al. teach the equivalence of: i) surface treating the filler with aminosilane before combination with resin in a batch formulation, with ii) separate aminosilane addition to the batch formulation.

Applicant points out that referenced Example II of Fetscher et al. is directed to the formulation of a molding powder, and not a flowable liquid coating composition, such as recited in present claims 1 and 18.

Fetscher et al. mention an alternative embodiment in which the encapsulating composition may be a liquid epoxy resin system. However, Fetscher et al. also indicate the liquid system (or solid or powdered systems for that matter) may be unfilled (col. 2, lines 20-22; Example VIII). That is, an emphasis in Fetscher et al. is to obtain uniform distribution of a silane throughout the resinous composition, which can be done by admixing the silane as a free component into the batch without the need for a filler carrier at all (col. 2, lines 26-29).

Examples I and IV of Fetscher et al. appear to describe liquid systems, but only quartz or silicate is surface treated with aminosilane, not barium sulfate filler. Fetscher et al. lists a number of fillers at column 4, lines 32-34, including finely divided silica, quartz, calcium silica barium sulfate, hydrated alumina.

Fetscher et al. does not explicitly say that these fillers are interchangeable in a liquid composition application *and* as used as a surface pretreatment on the filler.

Also, Fetscher et al. seems to suggest aminosilanes and epoxysilanes are interchangeable additives for their purposes in encapsulants. However, for coating compositions, Applicant's experimental results showed significantly better performance results are obtained when barium sulfate is surface treated with aminosilane versus epoxysilane or other alternatives (present application, see Example 1).

Applicant is filing concurrently herewith the Declaration under 37 C.F.R. §132 by Thomas J. Lynch, the sole named inventor in the present application (the "Lynch Declaration"). As shown by the comparative experimental evidence set forth in the accompanying Lynch Declaration, coatings filled with aminosilane treated barium sulfate were significantly superior to the comparison coating filled with amorphous silica, as well as the coatings filled with untreated barium sulfate or barium sulfate treated with a different type of silane chemistry. Reference is made thereto.

Consistent with those comparative experimental results, Applicant has conducted other experimental studies which also found that amorphous silica, and nepheline syenite, did not yield comparable performance results to barium sulfate when surface treated with an aminosilane and thereafter are introduced into a coating composition (present application, see Example 1).

In addition, regarding present claim 17, Fetscher et al. do not teach or suggest that the encapulsating compositions described therein, which are often referred to as potting materials in the electronics packaging field, are film-formers that may be formed into a dried coating having an average film thickness of about 1×10^{-3} to about 25×10^{-3} inch. Similarly, instant claim 23 recites the same film thickness.

Moreover, Applicant submits that one of ordinary skill in the art would see no obvious connection or suggestion to be made between durability and insulating properties of an encapsulant for a transistor, and the salt spray blistering and corrosion performance of a thin coating on a steel flat panel. The microelectronics encapsulant field of endeavor of Hara et al. is not analogous nor predictive of the anticorrosion thin film coating field of endeavor of relevance to the present invention.

In view of at least the above, Applicant submits that Fetscher et al. does not render obvious any of the present claims, and, thus, Applicant requests that this rejection be withdrawn.

Regarding paragraph 7 of the Office Action, Applicant acknowledges with appreciation, and concurs, with the determination that original claims 2 and 3 are neither taught nor suggested by the prior art.

Claims 2 and 3 each remain in the application, depending from amended claim 1. Also, the recitations of original claim 3 have been rewritten in independent form including the recitations of claim 1 as new claim 29. New claim 30, which depends on method claim 18, is based on the recitations of original claim 3.

In view of the above, it is believed that this application is in condition for allowance, and notice of such is respectfully requested.

Respectfully submitted,
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